



PICTOMETRY INTERNATIONAL

Aerial Photography in Rhode Island

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Rhode Island has a long history of being at the forefront of activity including a number of “firsts” that played an important role in early American history. In 1772, citizens of Rhode Island Colony attacked the British schooner, Gaspee, making this event the first armed conflict associated with the Revolutionary War. On May 4, 1776, the General Assembly of Rhode Island declared its independence from Great Britain, two months before the Declaration of Independence was signed, making the colony the first to declare its independence.

Today, the State of Rhode Island is continuing its history of “firsts” in a new way. With its visionary approach to call taker and dispatcher technologies, the state is a leader in public safety communications. This year, Rhode Island becomes the first state in the nation to implement a Pictometry visual information system in a statewide 9-1-1 program.

Aerial view of the Rhode Island state capitol in Providence. The statewide PSAP is using aerial imaging from Pictometry to provide detailed visual information to first responders.

Background

The state of Rhode Island covers some 1,214 square miles with a population of over one million residents. According to data supplied by the Rhode Island Enhanced 9-1-1 Uniform Emergency Telephone System, the State processed over 552,000 requests for emergency services in 2004. Over half of these requests came from wireless (cellular) phones.

Equipped with 14 workstations and a total staff of 50 personnel, the progressive statewide agency has found new ways to better serve its citizens.

In 1978, a 15-member state legislative commission conducted a feasibility study on creating a statewide 9-1-1 system using a single PSAP (Public Safety Answering Point). Based on the findings of the commission, the Rhode Island General Assembly established a 9-1-1 Authority that took its first call on November 21, 1988.

After several years of change, the corporate existence of the 9-1-1 agency evolved into its current structure as the Rhode Island Enhanced 9-1-1 Uniform Emergency Telephone System, operating under the direction of the Rhode Island Department of Administration. Raymond R. LaBelle serves as the executive director of the statewide emergency telephone system.

In July 2000, after a rigorous assessment of its operations and procedures by the Commission on Accreditation for Law Enforcement Agencies, Rhode Island’s E9-1-1 System was accredited for meeting compliance standards for a public safety agency. The E9-1-1 agency continued to add new technologies to meet its objective to be current in its services.

In 2001, field captured GIS data for buildings, properties, fire hydrants, and other important location information were incorporated into a useable data-

VoIP In Rhode Island

Vonage Completed “Enhanced 9-1-1” Trials Key Technology Solution Provided by Intrado

base. This new information provided the state’s call takers and dispatchers with mapping information on the location of both wired telephone and wireless calls for help.

First State for 9-1-1 VoIP Identification

In April of last year, a call came into the Rhode Island PSAP from a distraught mother of a toddler having a seizure. But unlike the traditional land-based calls or a cellular call that could be traced close to its origin, this distress call came from somewhere in the state using the Internet. A call taker received the call on an unrecordable administrative phone line and the Internet call offered no location information or callback number that would normally be available. Fortunately, dispatchers were able to verbally determine the location and send timely medical assistance.

“This incident raised a ‘red flag’ for us,” said LaBelle. “We needed to aggressively arrive at a workable solution that would address this problem.” Under LaBelle’s leadership, collaboration between state officials, technical experts, and several vendors, led to Rhode Island becoming the first state in the country to implement a technology solution that enables tracking of VOIP (Voice Over Internet Protocol) initiated phone calls to 9-1-1. [See sidebar].

First State for 9-1-1 Deployment of Pictometry

In another advance in 9-1-1 technology for the state, LaBelle added the street-level, curbside photos that were available for areas of the state that had been geocoded. “This was a step in the right direction,” said LaBelle, “but it only offered a partial solution.”

Using these photos, call takers were able to gain some assistance in the location identification process. But this approach did not offer enough visual information that could be useful as initially anticipated.

“We needed a new form of photography, one that would be faster, easier to use, and able to provide location data that could be integrated into our GIS and mapping software,” said LaBelle.

After learning about Pictometry’s aerial imaging solution that provides up to 12 different views of every square foot in a city, county, or state, LaBelle

Vonage Holdings Corp, a leading provider of broadband phone service, has completed a VoIP E9-1-1 trial in the state of Rhode Island. As a result of a successful collaboration with Rhode Island E9-1-1, Vonage was able to deliver both caller’s location and call back number to 9-1-1 emergency services personnel for 9-1-1 calls placed using Vonage broadband phone service. Vonage’s partner Intrado Inc., North America’s leading provider of 9-1-1 systems and services, in concert with Rhode Island E9-1-1’s technical consultant, Arthur Kraus of AK Associates, Inc., provided the technology that enabled this service.

How It Works

When Vonage customers dial 9-1-1, the call is routed over Vonage’s 9-1-1 server using industry standard SIP protocol. The Vonage server then queries Intrado for routing instructions. The call is then directed to the selective router that serves the Rhode Island Public Safety Answering Point (“PSAP”). Simultaneously, Intrado places the customer’s address and telephone number into the Automatic Location Information (ALI) server. The supplementary special key unique to the call is included in signaling, and allows the PSAP 9-1-1 operator to pull the customer’s address and phone number from the ALI database. Vonage and Intrado are working with other states to provide similar solutions and intend to roll them out market by market.

According to the company, any Vonage VoIP 9-1-1 call in Rhode Island today can be routed to the correct Public Safety Answering Point (PSAP), on dedicated 9-1-1 trunks, delivering the caller’s Automatic Location Information (ALI) and Automatic Number Information (ANI) directly to the 9-1-1 call takers computer screen. For PSAP and VoIP users alike, the experience mirrors a traditional wireline 9-1-1 call. In addition, by using the existing network, costs are contained in a manner that does not affect quality.

“Providing location and callback data from broadband telephony calls is a major step in providing Vonage customers with a true E9-1-1 solution on par with traditional telephone service,” stated Jeffrey A. Citron, chairman and CEO of Vonage Holdings Corp. “The state of Rhode Island has shown their leadership by being the first state to ensure that Internet-based communications services can interoperate with Public Safety Answering Points. We commend them for their expertise and vision, and hope that other states will be as genuinely concerned about protecting the public as Rhode Island.”

Ramifications

The work done in Rhode Island demonstrates that the technology exists today to support VoIP E9-1-1. Through continued cooperation among the proper parties, true E9-1-1 for VoIP can be delivered to all VoIP subscribers regardless of where they are and what number they are calling from. This broad availability of E9-1-1 service for VoIP subscribers will help consumers more fully accept VoIP as a viable primary line alternative. Intrado looks forward to working with all parties involved to aid in the advancement of VoIP E9-1-1 service and enable its availability on a nationwide scale.

www.vonage.com www.intrado.com www.ri911.ri.gov

began the process of seeking ways to finance the purchase of this visual information system that combines 3D-like images with location data coordinates similar to GPS.

Using funds from a homeland security grant, LaBelle is now implementing a pilot program this year using Pictometry in four cities in the state that will use the new visual database of high-resolution, oblique digital images with measuring software. This makes Rhode Island the first state in the country to implement

Pictometry in a statewide 9-1-1 deployment. Cities participating in the pilot program are Cranston, Newport, Providence, and Warwick.

A Statewide Visual Advantage

“Our new visual information system captures vital location data directly onto the digital photos. In addition, almost all of our new images are taken from an angle that lets us view houses and land terrain,” said LaBelle. “Our call takers



By having current, detailed images of its geography in a variety of views, dispatchers and responders can coordinate calls and responses better than using a flat map.

are now able to measure building and land features directly on the multi-view images. This is a clear advantage over our use of traditional film-based, curb-side and straight-down images."

Nationwide, several 9-1-1 agencies have reported that they were able to locate wireless calls for help in under a minute by using Pictometry's georeferenced images that link to mapping systems already in place at the centers.

"Saving time in a 9-1-1 situation makes all the difference in the world," says LaBelle. "Using this system, we can provide up close, detailed information to our first responders that we were not able to before. The multiple photos that are viewed from the side present a

clearer picture of incident locations."

The state has a mixture of coastal terrain, rolling hills, and wooded areas where the use of visual clues can help call takers and first responders to be better informed of the entire incident areas. "Incidents at night can be very frustrating since dispatchers sitting at a workstation may not know what an area looks like in the daytime. With the click of a mouse, we can now have more information that helps us save crucial time in our responses. Seconds can mean the difference in how a call is resolved. With this new visual advantage, we will be able to receive critical visual information to provide to those first responders who need to have it. It will also provide us



Raymond R. LaBelle, executive director of the Rhode Island Enhanced 9-1-1 Uniform Emergency Telephone System, with one of his calltakers. Rhode Island is one of two states to manage 9-1-1 on a statewide basis from a single PSAP.

with substantially more credible and reliable information about each call that comes into our PSAP. And that's a very good 'first' for the citizens of Rhode Island." **■**

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